

WHAT IS CLAIMED IS:

1. A bicycle pedal assembly comprising:

a bicycle pedal including

a pedal shaft having a center rotational axis;

a pedal body rotatably coupled to the pedal shaft about the center rotational axis of the pedal shaft, the pedal body having a first end and a second end with a center plane extending between the first and second ends and passing through the center rotational axis of the pedal shaft;

a front clamping member coupled to the first end of the pedal body, the front clamping member having a front cleat engagement surface facing towards the center plane of the pedal body; and

a rear clamping member coupled to the second end of the pedal body, the rear clamping member having a rear cleat engagement surface facing towards the center plane of the pedal body;

a first bicycle shoe cleat including first front and rear attachment portions configured and arranged to cooperate with the front and rear clamping members to release the first bicycle shoe cleat from a cleat engaged position to a cleat released position upon application of a first predetermined amount of outward twisting force; and

a second bicycle shoe cleat including second front and rear attachment portions configured and arranged to cooperate with the front and rear clamping members to release the second bicycle shoe cleat from the cleat engaged position to the cleat released position upon application of a second predetermined amount of outward twisting force that is higher than the first predetermined amount of outward twisting force,

the first and second bicycle shoe cleats being further configured and arranged to release from the bicycle pedal at substantially an identical cleat release angle.

2. The bicycle pedal assembly according to claim 1, wherein

the rear clamping member is movably coupled to the pedal body to move between the cleat engaged position to the cleat released position.

3. The bicycle pedal assembly according to claim 1, wherein the first and second bicycle shoe cleats are configured and arranged to deflect the rear clamping member about an equal amount.

4. The bicycle pedal assembly according to claim 1, wherein the first and second bicycle shoe cleats are configured and arranged such that the second bicycle shoe cleat deflects the rear clamping member slightly more than the first bicycle shoe cleat.

5. The bicycle pedal assembly according to claim 4, wherein the rear clamping member is pivotally coupled to the pedal body about a rear pivot axis with a biasing member urging the rear clamping member towards the cleat engaged position.

6. The bicycle pedal assembly according to claim 1, wherein the first front attachment portion includes a first front coupling surface selectively engageable with the front engagement surface of the front clamping member, the first rear attachment portion includes a first rear coupling surface selectively engageable with the rear engagement surface of the rear clamping member; and the second front attachment portion includes a second front coupling surface selectively engageable with the front engagement surface of the front clamping member, the second rear attachment portion includes a second rear coupling surface selectively engageable with the rear engagement surface of the rear clamping member.

7. The bicycle pedal assembly according to claim 6, wherein the first front and rear attachment portions of the first bicycle shoe cleat are substantially mirror images of the second front and rear attachment portions of the second bicycle shoe cleat.

8. The bicycle pedal assembly according to claim 6, wherein the rear clamping member is movably coupled to the pedal body to move between the cleat engaged position to the cleat released position.

9. The bicycle pedal assembly according to claim 8, wherein the first rear attachment portion further includes a high release force engagement surface arranged and configured on a first side of a front to rear center longitudinal axis of the first bicycle shoe cleat to selectively engage an inside section of the rear clamping member and move the rear clamping member upon application of the first predetermined amount of outward twisting force on the first bicycle shoe cleat relative to the pedal body, and

the second rear attachment portion further includes a low release force engagement surface arranged and configured on a first side of a front to rear center longitudinal axis of the second bicycle shoe cleat to selectively engage the inside section of the rear clamping member and move the rear clamping member upon application of the second predetermined amount of outward twisting force on the second bicycle shoe cleat relative to the pedal body.

10. A bicycle pedal assembly comprising:
a right and left bicycle pedals, each of the right and left bicycle pedals including
a pedal shaft having a center rotational axis;
a pedal body rotatably coupled to the pedal shaft about the center rotational axis of the pedal shaft, the pedal body having a first end and a second end with a center plane extending between the first and second ends and passing through the center rotational axis of the pedal shaft;
a front clamping member coupled to the first end of the pedal body, the front clamping member having a front cleat engagement surface facing towards the center plane of the pedal body; and
a rear clamping member coupled to the second end of the pedal body, the rear clamping member having a rear cleat engagement surface facing towards the center plane of the pedal body;
a first bicycle shoe cleat including first front and rear attachment portions configured and arranged to selectively cooperate with the front and rear clamping members of the right and left bicycle pedals; and

a second bicycle shoe cleat including second front and rear attachment portions configured and arranged to selectively cooperate with the front and rear clamping members of the right and left bicycle pedals,

the first bicycle shoe cleat being further configured and arranged to release from the left bicycle pedal upon application of a first predetermined amount of outward twisting force on the first bicycle shoe cleat,

the second bicycle shoe cleat being further configured and arranged to release from the right bicycle pedal upon application of the first predetermined amount of outward twisting force on the second bicycle shoe cleat,

the first bicycle shoe cleat being further configured and arranged to release from the right bicycle pedal upon application of a second predetermined amount of outward twisting force that is higher than the first predetermined amount of outward twisting force on the first bicycle shoe cleat,

the second bicycle shoe cleat being further configured and arranged to release from the left bicycle pedal upon application of the second predetermined amount of outward twisting force on the second bicycle shoe cleat.

11. The bicycle pedal assembly according to claim 10, wherein the first and second bicycle shoe cleats are configured and arranged to release from the right and left bicycle pedals at substantially an identical cleat release angle.

12. The bicycle pedal assembly according to claim 10, wherein the rear clamping member of the right bicycle pedal is movably coupled to the pedal body of the right bicycle pedal to move between a cleat engaged position to a cleat released position, and

the rear clamping member of the left bicycle pedal is movably coupled to the pedal body of the left bicycle pedal to move between a cleat engaged position to a cleat released position.

13. The bicycle pedal assembly according to claim 10, wherein the first and second bicycle shoe cleats and the rear clamping members of the left and right bicycle pedals are configured and arranged to deflect the rear clamping members of the right and left bicycle pedals about an equal amount regardless of

which of the first and second bicycle shoe cleats are used with the left and right bicycle pedals.

14. The bicycle pedal assembly according to claim 10, wherein the first bicycle shoe cleat and the rear clamping member of the left bicycle pedal are further configured and arranged such that the rear clamping member of the left bicycle pedal deflects by a first deflection amount to release the first bicycle shoe cleat from the left bicycle pedal upon application of the first predetermined amount of outward twisting force on the first bicycle shoe cleat,

the second bicycle shoe cleat and the rear clamping member of the right bicycle pedal are further configured and arranged such that the rear clamping member of the right bicycle pedal deflects by a first deflection amount to release the first bicycle shoe cleat from the right bicycle pedal upon application of the first predetermined amount of outward twisting force on the first bicycle shoe cleat,

the first bicycle shoe cleat and the rear clamping member of the right bicycle pedal are further configured and arranged such that the rear clamping member of the right bicycle pedal deflects by a second deflection amount that is slightly more than the first deflection amount to release the first bicycle shoe cleat from the right bicycle pedal upon application of the second predetermined amount of outward twisting force on the first bicycle shoe cleat, and

the second bicycle shoe cleat and the rear clamping member of the left bicycle pedal are further configured and arranged such that the rear clamping member of the left bicycle pedal deflects by the second deflection amount to release the second bicycle shoe cleat from the left bicycle pedal upon application of the second predetermined amount of outward twisting force on the second bicycle shoe cleat.

15. The bicycle pedal assembly according to claim 14, wherein the rear clamping member of the right bicycle pedal is pivotally coupled to the pedal body of the right bicycle pedal about a rear pivot axis with a biasing member urging the rear clamping member of the right bicycle pedal towards a cleat engaged position, and

the rear clamping member of the left bicycle pedal is pivotally coupled to the pedal body of the left bicycle pedal about a rear pivot axis with a biasing member

urging the rear clamping member of the left bicycle pedal towards a cleat engaged position.

16. The bicycle pedal assembly according to claim 10, wherein the first front and rear attachment portions of the first bicycle shoe cleat are substantially mirror images of the second front and rear attachment portions of the second bicycle shoe cleat.

17. The bicycle pedal assembly according to claim 10, wherein the first rear attachment portion of the first bicycle shoe cleat further includes a first low release force engagement surface arranged on a first side of a front to rear center longitudinal axis of the first bicycle shoe cleat, and a first high release force engagement surface arranged on a second side of a front to rear center longitudinal axis of the first bicycle shoe cleat,

the first low release force engagement surface being configured to selectively engage an inside section of the rear clamping member of the left bicycle pedal and move the rear clamping member of the left bicycle pedal upon application of the first predetermined amount of outward twisting force on the first bicycle shoe cleat relative to the left bicycle pedal,

the first high release force engagement surface being configured to selectively engage an inside section of the rear clamping member of the right bicycle pedal and move the rear clamping member of the right bicycle pedal upon application of the second predetermined amount of outward twisting force on the first bicycle shoe cleat relative to the right bicycle pedal,

the first rear attachment portion of the second bicycle shoe cleat further includes a second low release force engagement surface arranged on a first side of a front to rear center longitudinal axis of the second bicycle shoe cleat, and a second high release force engagement surface arranged on a second side of a front to rear center longitudinal axis of the second bicycle shoe cleat,

the second low release force engagement surface being configured to selectively engage an inside section of the rear clamping member of the right bicycle pedal and move the rear clamping member of the right bicycle pedal upon application of the first predetermined amount of outward twisting force on the second bicycle shoe cleat relative to the right bicycle pedal,

the second high release force engagement surface being configured to selectively engage an inside section of the rear clamping member of the left bicycle pedal and move the rear clamping member of the left bicycle pedal upon application of the second predetermined amount of outward twisting force on the second bicycle shoe cleat relative to the v bicycle pedal,

18. A bicycle shoe cleat comprising:

an attachment portion having a front end, a rear end, an upper sole side facing in a first direction and a lower pedal side facing in a second direction which is substantially opposite to the first direction;

a front coupling portion extending from the front end, the front coupling portion having a front coupling surface facing in the first direction and a front stop surface facing in a forward direction; and

a rear coupling portion extending from the rear end, the rear coupling portion having a rear coupling surface facing in the first direction and a rear stop surface facing in a rearward direction with a low force rear corner abutment formed at one lateral end of the rear stop surface and a high force rear corner abutment formed at the other lateral end of the rear stop surface,

the front and rear coupling portions being configured to define a pivot axis of the cleat with the high force rear corner abutment being spaced farther from a centerline of the cleat that includes the pivot axis of the cleat than the low force rear corner abutment.

19. The bicycle shoe cleat according to claim 18, wherein

the rear stop surface includes a pair of lateral rear stop surfaces that are angled forwardly relative to the centerline of the cleat as the lateral rear stop surfaces extend outwardly from the centerline of the cleat.

20. The bicycle shoe cleat according to claim 18, wherein

the front stop surface includes a pair of lateral front stop surfaces that are angled forwardly relative to the centerline of the cleat as the lateral front stop surfaces extend outwardly from the centerline of the cleat.

21. The bicycle shoe cleat according to claim 18, wherein the rear stop surface includes a pair of lateral rear stop surfaces that are angled forwardly relative to the centerline of the cleat as the lateral rear stop surfaces extend outwardly from the centerline of the cleat.

22. The bicycle shoe cleat according to claim 18, wherein the front coupling portion includes a low force front corner abutment formed at one lateral end of the front stop surface and a high force front corner abutment formed at the other lateral end of the front stop surface located laterally of the front coupling surface,

the low force front corner abutment being diagonally arranged relative to the low force rear corner abutment and the high force front corner abutment being diagonally arranged relative to the high force rear corner abutment.

23. The bicycle shoe cleat according to claim 22, wherein the high force front corner abutment is spaced farther from the centerline of the cleat than the low force front corner abutment.

24. The bicycle shoe cleat according to claim 22, wherein the pivot axis of the cleat is defined by the intersection of a first diagonal line extending through the low force front corner abutment and the low force rear corner abutment and a second diagonal line extending through the high force front corner abutment and the high force rear corner abutment.

25. The bicycle shoe cleat according to claim 18, wherein the rear coupling portion includes a rear flange extending from the rear end of the cleat with the rear flange being offset from the centerline of the cleat towards the high force rear corner abutment.

26. The bicycle shoe cleat according to claim 25, wherein the rear flange includes a rear edge having a first corner located between the centerline of the cleat and the low force rear corner abutment, and a second corner located between the centerline of the cleat and the high force rear corner abutment.

27. The bicycle shoe cleat according to claim 26, wherein the second corner is spaced farther from the centerline of the cleat than the first corner.

28. The bicycle shoe cleat according to claim 26, wherein the front coupling portion includes a low force front corner abutment formed at one lateral end of the front stop surface and a high force front corner abutment formed at the other lateral end of the front stop surface located laterally of the front coupling surface,

the low force front corner abutment being diagonally arranged relative to the low force rear corner abutment and the high force front corner abutment being diagonally arranged relative to the high force rear corner abutment.

29. The bicycle shoe cleat according to claim 28, wherein the high force front corner abutment is spaced farther from the centerline of the cleat than the low force front corner abutment.

30. The bicycle shoe cleat according to claim 28, wherein the pivot axis of the cleat is defined by the intersection of a first diagonal line extending through the low force front corner abutment and the low force rear corner abutment and a second diagonal line extending through the high force front corner abutment and the high force rear corner abutment.